8.12 Hazardous Materials Handling

8.12.1 Affected Environment

The Henrietta Peaker Project (HPP) consists of a 91.4-megawatt (MW) (net), natural-gas-fired, simple-cycle power plant located approximately 10 miles southwest of Lemoore, California, on a seven-acre portion of a 20-acre parcel owned by GWF Energy LLC. The HPP will interconnect to the existing adjacent Pacific Gas and Electric Company (PG&E) Henrietta Substation through a new 550-foot 70-kilovolt (kV) transmission line supported on two new transmission poles. Other linear facilities include an approximately 16.5-foot water interconnection pipeline (from the site property boundary) and a 2.2-mile Southern California Gas Company (SoCalGas) natural gas interconnection pipeline. Additionally, approximately five acres will be used for temporary construction laydown and parking.

The project will consist of two General Electric LM6000 combustion turbine generators (CTGs) operating in simple-cycle mode on a 16 hour/day, six-day/week schedule. The CTGs will be equipped with inlet air filtration, evaporative cooling, and a standard acoustical enclosure. Each turbine exhaust will be equipped with an oxidation catalyst for control of carbon monoxide (CO) and volatile organic compounds (VOCs) and an aqueous-ammonia-type selective catalytic reduction (SCR) system for control of nitrogen oxides (NO_x). The plant will be designed to conform to the California Air Resources Board (CARB) Best Available Control Technology (BACT) guidelines. Actual emissions will be at or below BACT guidelines, as follows: 3.6 parts per million by volume, dry (ppmvd) NO_x, 6 ppmvd CO, and 2 ppmvd VOCs, all corrected to 15 percent oxygen.

Water will be supplied to the HPP by the Kings County and Westlands Water District using existing water rights. The project will not include a cooling tower and will therefore have a minimal water demand. Wastewater will be recycled using a near-zero-discharge system. Water that cannot be recycled and used on site will be trucked off site for appropriate disposal.

The surrounding property is primarily agricultural. The nearest public receptors are workers or neighboring residents/businesses. The nearest residences are approximately 1.5

miles north and east at Naval Air Station (NAS) Lemoore housing. A trucking business is located approximately 0.9 miles south of the site. A Pacific Bell office is located approximately 1.3 miles to the northeast. Land use is discussed in more detail in Section 8.4 of this Application for Certification (AFC).

This section reviews the hazardous materials that will be handled, used, and stored at the HPP. This section also provides the procedures and engineering controls to be employed to minimize potential environmental impacts from the use of these materials.

The HPP will use one substance designated by federal law as acutely hazardous, aqueous ammonia, to control emissions of NO_x. This section provides information on a potential accidental release of aqueous ammonia, the impacts of such a release, and proposed mitigation measures.

8.12.1.1 Flooding Concerns

There are no permanent bodies of water near the HPP site. Flood hazard maps for the site show that the project area is not subject to flooding, and that the project is outside of the 100-year floodplain (see Figure 8.14-3 for the Federal Emergency Management Agency floodplain map for the HPP site).

The largest storm event in the region recorded by the National Oceanic and Atmospheric Administration measured 4.3 inches of rainfall. The storm occurred on February 1, 1998 in Hanford, California, approximately 15 miles to the east of the HPP site. The average monthly precipitation for the area is 1.5 inches during the winter and 0 inches during the summer. The hydrology of the site is discussed in more detail in Section 8.14 (Water Resources) of this AFC. Hazardous materials storage areas will be designed to withstand weather impacts in accordance with Article 80 of the Uniform Fire Code.

8.12.1.2 Seismic Concerns

The HPP site is approximately 65 miles west of the Sierra Nevada fault and 50 miles east of the San Andreas fault. According to the U.S. Geological Survey, 54 earthquakes

have been reported within a 25-mile radius of the proposed HPP site since 1979. Ninety-six percent of these earthquakes had magnitudes of 4.0 or less.

The HPP will be built in accordance with the California Building Code 1998 Seismic Zone 3 requirements. The aqueous ammonia tank will be designed and installed in accordance with seismic and other criteria in Article 80 of the Uniform Fire Code. The seismic hazards associated with the aqueous ammonia process will be addressed in the Hazard and Operability Study that will be conducted as part of the Progress Safety Management (PSM) and California Accidental Release Prevention (CalARP) programs. Additional information on seismic and geologic issues is provided in Section 8.15 (Geologic Resources and Hazards) of this AFC.

8.12.1.3 Potential Environmental and Human Health Effects

This section reviews the hazardous materials that will be used and stored on site during the construction and the operation and maintenance phases of the HPP. Hazardous and extremely hazardous substances will be stored and handled according to applicable laws, ordinances, regulations and standards (LORS).

8.12.1.4 Hazardous Materials Used in the Construction Phase

During the construction phase of the HPP, the following hazardous materials will be used: gasoline, diesel fuel, motor oil, hydraulic fluid, lubricants, solvents, cleaners, sealers, paints, and paint thinner. The potential for environmental and human health effects associated with these hazardous materials is minimal, and storage quantities will be minimized. Information on the storage quantities, storage types, uses, and hazards of these materials is shown in Table 8.12-1.

The most likely incident involving hazardous materials during construction is a small spill or release of fuels, solvents, paints, or lubricants. The potential for adverse health effects will be avoided by quickly cleaning up any spill that occurs and ensuring that workers are adequately trained to recognize the hazards associated with such spills. A more serious incident

could involve a service or refueling vehicle. Such incidents can be avoided by following proper safety procedures and using an informed construction crew.

In case of an accident, the Kings County Fire Department will be notified as the first responder. All other federal, state, and local notification requirements will be followed for any release that exceeds the reportable quantity or threatens to have a significant impact. The HPP will comply with all requirements for hazardous materials transportation on state highways.

In summary, due to the small quantities of hazardous materials that will be used during construction, no adverse environmental or human health impacts are anticipated.

8.12.1.5 Hazardous Materials Used in the Operation and Maintenance Phase

A variety of hazardous materials in small volumes and one extremely hazardous substance will be used and/or stored on site during operation of the HPP. These hazardous materials are listed in Table 8.12-2, along with information on categories of each hazardous material and other information. The locations of some of these hazardous materials are shown in Figure 8.12-1. Table 8.12-3 shows the characteristics of the hazardous materials used during operation and maintenance of the facility.

The hazardous materials that will be used during the operation and maintenance phase are typical of those used at other industrial facilities and include oils, solvents, and other products. Hazardous materials will be handled and stored in accordance with applicable codes and regulations. Incompatible materials will be stored in separate storage containment areas (i.e., locked storage sheds). Areas susceptible to potential leaks and/or spills will be paved and bermed or have other secondary containment. Piping and tanks will be protected from potential traffic hazards by concrete barriers or concrete-filled pipe bollards. The HPP will comply with all requirements for hazardous material transportation on state highways.

Additional information on the hazardous substances regulated under the CalARP program is provided below.

8.12.1.6 Acutely Hazardous Substances Used in Operation of the Project

The proposed HPP will use a 29.5 percent aqueous ammonia solution for SCR of NO_x emissions. Aqueous ammonia storage and handling facilities will be equipped with continuous tank level monitors, temperature monitors, and excess flow and emergency block valves. A secondary containment tank beneath the tank-truck-unloading pad will be provided so that in the event of an inadvertent release from the tank truck, the liquid will be contained within the secondary structure. The secondary containment tank will have an approximately 10-inch-diameter opening for spills to enter into the tank. The small size of the secondary-containment tank opening will restrict ammonia vapor releases to the atmosphere. Maintenance access to the underground secondary containment tank will be via a trap door and ladder.

Tank trucks will be unloaded in an engineered, reinforced-concrete, tank-truck-unloading area. This unloading area will be constructed of concrete that has chemically resistant coating. The unloading area will be sloped to drain into the underground secondary containment tank. A piping and instrumentation diagram for the aqueous ammonia process is shown on Figure 8.12-2. The thresholds adopted for aqueous ammonia are listed below:

Program	Administrative Agency	Threshold Quantity
CalARP Program[1]	Office of Emergency Services/Administering Agency	500 pounds
Risk Management Plan	U.S. Environmental Protection Agency	20,000 pounds (ammonia content basis)

[1] Substances regulated under California Accidental Release Prevention (Cal/ARP) were called "acutely hazardous materials" under the former Risk Management and Prevention Program.

Although ammonia poses numerous physical and health hazards, as explained below, a 29.5 percent aqueous ammonia solution is safer than anhydrous ammonia.

Physical Hazards of Ammonia. Aqueous ammonia is stored and transported as a liquid under ambient temperature and pressure. Ammonia is incompatible or reactive with the following: strong oxidizers, acids, halogens, and silver and zinc salts. It is also corrosive to copper and galvanized surfaces. Ammonia gas is generally regarded as nonflammable; however, it can burn. Under certain conditions, mixtures of ammonia gas and air will explode when ignited. It has a lower explosive limit of 15 percent, and an upper explosive limit of 28 percent.

Health Hazards of Airborne Ammonia. Airborne ammonia is corrosive, highly toxic, and extremely irritating to any exposed tissues. Contact can cause severe burns of the skin or eyes. Exposure can cause headaches, loss of sense of smell, and nausea. Higher levels may irritate the lungs and cause coughing and/or shortness of breath. Very high exposures can cause pulmonary edema, which can lead to death.

With proper protection, the adverse effects of exposure to ammonia can be reduced or eliminated. The threshold limit value set by the American Conference of Governmental Industrial Hygienists (ACGIH) is 25 parts per million (ppm) (ACGIH, 1996). Exposure limits set by ACGIH, the National Institute for Occupational Safety and Health, and the Occupational Safety and Health Administration (OSHA) are listed in Table 8.12-4.

Other exposure limits include the Emergency Response Planning Guidelines (ERPG), developed by the American Industrial Hygiene Association. ERPG Level 2 corresponds to the concentration that persons may be exposed to for up to an hour without suffering irreversible health effects. The U.S. Environmental Protection Agency (U.S. EPA) uses ERPG-2 as the toxic endpoint for Risk Management Plan (RMP) accident analyses; facilities with public receptors within a circle delineated by the toxic endpoint are required to develop a prevention program for the chemical process.

ERPG levels are shown in Table 8.12-5, along with other values that are considered by the California Energy Commission (CEC) for siting purposes.

8.12.3 Offsite Consequence Analysis

This section presents an Offsite Consequence Analysis (OCA) and evaluation of potential acute public health impacts from an accidental release of acutely hazardous materials. An evaluation of materials to be stored and used on site was made against both the federal and state lists of acutely hazardous materials regulated under the federal RMP and CalARP requirements. Both programs require an OCA if maximum storage quantities of regulated substances exceed threshold quantities. The only material that may be stored and used on site by the HPP in excess of state thresholds is aqueous ammonia.

The OCA involves two accidental release scenarios. The first scenario is considered an "alternative" release scenario. The second scenario is considered a worst-case release and serves to determine which RMP program level would apply to the aqueous ammonia process. This is discussed further in Section 8.12.4.6.

8.12.3.1 Accidental Release Scenarios

One 9,000-gallon, doubled-walled tank will store aqueous ammonia in a 29.5 percent concentration. Potential accidental release scenarios due to aqueous ammonia handling and use include losses from the storage tank, losses during truck unloading to the storage tanks, losses in the liquid ammonia delivery system from the storage tanks to the vaporizer, and losses of vaporized ammonia during delivery to the SCR catalyst beds. All of these steps of the ammonia storage and handling system were evaluated. Because of safety shutoff systems associated with delivery of aqueous ammonia from the tanks to the vaporizer, and of ammonia vapor to the SCR, potential ammonia release quantities from these system components in the event of an upset condition are small compared to losses from the storage tanks or from truck unloading. The storage tank will be a double-walled tank. In the event of a failure of the inside tank wall, tank contents will be contained within the exterior tank wall. This "passive" mitigation system does not require any further mechanical systems to contain the tank contents. Since this passive mitigation will be in place and the probability of a double-wall rupture is extremely unlikely, the truck unloading accident was identified as the "worst-case" scenario. For the purposes of this assessment, the alternative release analysis also considered a truck unloading accident, since mitigation for the storage tank will be passive, but under alternative meteorological conditions.

The aqueous ammonia unloading station will be an engineered tank-truck-unloading area, paved with reinforced, sealed concrete. The unloading area will slope to a center drain leading to an underground containment tank. The underground tank will be adequate to hold the entire contents of a single, 6,700-gallon delivery truck plus a wash-water allowance.

The worst-case release scenario involving truck unloading assumes that the truck contents will empty and drain into the underground tank. The release scenario is summarized below:

Ammonia Release Scenario. The accidental release occurs during truck unloading. The spilled aqueous ammonia splashes as it releases and drains to the underground containment tank, after which time ammonia will evaporate only through the 10-inch opening of the inlet drain. The resulting emissions release is assumed to last 60 minutes until the tank can be closed.

Release assumptions are summarized below. Release rates, which assume liquid temperatures that are 20 degrees Fahrenheit (°F) above ambient temperatures, are summarized in Table 8.12-6. The ambient temperatures analyzed were 115 °F (slightly higher than the 112 °F maximum summertime temperature,[1] 95 °F (representative of average maximum summertime temperatures), and 63 °F (representative of the annual mean temperature).[2] The assumption of the aqueous ammonia temperature inside the underground contaminant tank being 20 °F above ambient provides for a conservative calculation of evaporation rate, since the liquid temperature inside the underground tank is not expected to be this high.

Emissions due to evaporation of ammonia inside the containment tank were estimated from the following U.S. EPA model for evaporative emissions from a single-phase low-volatility liquid (U.S. EPA, 1993):

$$E = 6.94\times10^{-7}(1+0.0043\ (T_a - 273.15)^2)\ u_r^{0.75}\ A_p\ M\ (p_v/p_{vh})$$

where: E = emission rate (kg/s)

u_r = ambient wind speed at 10-m altitude (meters per second [m/s])

T_a = ambient temperature (°K); here T_a must be greater than 273.15°K

[1] Data from a 51-year meteorological record for Fresno obtained from http://www.ncdc.noaa.gov/ol/climate/online/ccd.

[2] The annual mean temperature of 63.6 °F from a 30-year meteorological record from Fresno, and the 62.8 °F annual average temperature from the 1968 NAS Lemoore meteorological data set. (Note that National Weather Service data from Hanford provided an annual average temperature of 61.5 °F.)

A = pool area (m^2)

M = molecular weight (kg/kgmol)

p_v = vapor pressure of the chemical (Pa)

p_{vh} = vapor pressure of hydrazine at T_a (Pa)

The value for p_{vh} is given by:

$$p_{vh} = \exp[76.8580 - (7245.2/T_a) - 8.22\ln(T_a) + 0.006155T_a]$$

The predicted emissions are a function of the "pool area," ambient temperature, ambient wind speed, molecular weight of the liquid, and vapor pressure of the ammonia above the liquid. For the purposes of this emission assessment, the "pool area" was set equal to the opening of the 10-inch-diameter drain. The assumption is that evaporation of ammonia inside the underground containment tank is accounted for by ammonia vapor pressure and temperature, and that ambient wind speed accounts for convection of the ammonia vapor from the effective emission area (the drain opening).

Example Calculation

Pool surface area:

Diameter = 10 inches = **0.0507 m^2**

Ambient temperature of 115 °F; ammonia temperature 135 °F, wind speed of 1.0 m/s:

Vapor pressure of 29.5% ammonia: **2,211 mm Hg (293,842 Pa**) at 135 °F (interpolated from data in Perry's *Chemical Engineer's Handbook*, 5th Edition, Table 3-23, p.3-68).

Vapor pressure of hydrazine: **10,758 Pa** at 135 °F (calculated from equation above)

$$E = [6.94\times10^{-7}(1+0.0043\ (\mathbf{330.37} - 273.15)^2)\ (\mathbf{1.0})^{0.75}\ (\mathbf{0.0507})\ (17)\ (\mathbf{293,842})/(\mathbf{10,758})]$$

$$= 0.0002464 \text{kg/s} = \mathbf{0.2464}\ \text{g/s}$$

8.12.3.2 Meteorological Conditions

Atmospheric dispersion modeling requires the input of various meteorological conditions. Low wind speeds and stable atmospheric conditions inhibit pollutant dispersion, resulting in higher pollutant concentrations. Higher wind speeds and/or neutral to unstable atmospheric conditions provide for better pollutant dispersion. The 1968 meteorological data from NAS Lemoore were used to determine the frequency distribution of wind speed and stability combinations. These data indicate that the most prevalent wind speeds are 46 knots (2.06 m/s to 3.09 m/s), occurring about 30.2 percent of the time. The most prevalent atmospheric stability is F (very stable), occurring 27.8 percent of the time. However, F stability is already covered by the assumed worst-case meteorological conditions (with a 1-m/s wind speed). The next most prevalent atmospheric stability is D (neutral), occurring 26.9 percent of the time, which could be associated with 2–3 m/s winds. Therefore, a wind speed of 2.5 m/s and D atmospheric stability represent reasonable average meteorological conditions for the project area.

The U.S. EPA requires that worst-case OCA modeling be performed assuming a wind speed of 1.5 m/s with a stability class of F (stable) (U.S. EPA, 1998). This meteorological condition will generally result in overpredictive (conservative) concentrations. For the HPP, worst-case modeling was performed with a wind speed of 1.0 m/s and F stability to provide even more conservatism. The alternative meteorological analysis used a stability class of D and a wind speed of 2.5 m/s. Three ambient temperatures were used to assess potential impacts: 63 °F, 95 °F, and 115 °F (the latter temperature being representative of extreme summer conditions used in the worst-case analysis; the "alternative" meteorological analysis used the average maximum summertime temperature of 95 °F).

8.12.3.3 Endpoints

The OCA establishes an impact zone or a zone of vulnerability that depends upon the "endpoint." The endpoint corresponds to a concentration that is associated with a certain health effect. Any receptors between the source and this endpoint (i.e., within the impact zone) could experience the specified health effect. The four endpoints specified by the CEC for the OCA are 75 ppm, 200 ppm, 300 ppm, and 2,000 ppm. See Section 8.12.2.3 for a discussion of the health effects associated with these concentrations.

8.12.3.4 Atmospheric Dispersion Modeling

Atmospheric dispersion modeling was performed to estimate downwind concentrations of ammonia for the hypothetical release scenario discussed in Section 8.12.3.1. The dispersion modeling provided a conservative estimate of the zone of vulnerability (the maximum downwind distance at which a specific level of concern may potentially be exceeded).

The U.S. EPA–approved SCREEN3 dispersion model, Version 96043, was used (USEPA, 1995). SCREEN3 is a Gaussian steady-state dispersion model that can calculate potential ground-level air pollutant concentrations from either a point or area source. It is considered a screening-level model in that it predicts air pollutant concentrations based on 10-minute-average dispersion factors (which are conservatively taken to represent up to 1-hour concentrations) under either: (1) a prescribed wind speed–stability class combination, or (2) an assumed array of potential wind speed–stability class combinations, reporting the maximum predicted concentrations at any downwind distance under any of the meteorological conditions in the array. Ammonia vapor is lighter than air. Therefore, emissions associated with the evaporating ammonia would mix rapidly with the surrounding air and result in a neutrally buoyant plume. The area source for these runs was taken to be the area of the 10-inch drain opening to the underground containment tank.

8.12.3.5 Discussion of OCA Results

The SCREEN3 model provides concentration outputs with respect to distance from the release location. The radii of influence (distance from the source) to the four CEC-

identified levels of concern (75 ppm, 200 ppm, 300 ppm, and 2,000 ppm) for the different meteorological conditions are summarized in Table 8.12-7. Figures 8.12-3, 8.12-4, and 8.12-5 are graphs that show concentrations of ammonia as they decrease with distance for the ambient temperatures of 115 °F, 95 °F, and 63 °F, respectively. Figure 8.12-6 illustrates the radii of influence for the worst-case wind speed–stability class combination at 115 °F ambient temperature (worst-case meteorology), and Figure 8.12-7 shows the radii of influence for the annual average wind speed–stability combination at 95 °F ambient temperature (alternative-case meteorology). The circles shown on Figures 8.12-6 and 8.12-7 indicate the radii of influence equal to the maximum downwind distances corresponding to the concentration of ammonia modeled. Dispersion modeling files can be found in Appendix B.

Even under worst-case meteorological conditions (F stability, 1-m/s wind speed, 115 °F), concentrations of ammonia from the HPP site are estimated to fall below 75 ppm approximately 36.3 meters (119 feet) from the truck unloading area, which would not go off site. Under alternative-case meteorology (D stability, 2.5-m/s wind speed, 95 °F), the distance to 75 ppm falls to 13.62 meters (45 feet) from the truck unloading area.

It is important to note that this OCA is ultraconservative. For example, the worst-case meteorology used in the analysis (ambient temperature of 115 °F, F stability, and 1-m/s winds) would not realistically occur. Stable atmospheres and low winds are associated with typical nighttime and morning conditions, when ambient temperatures are not expected to be this high.

In summary, no significant offsite public health consequences due to an ammonia release are expected to occur, based on the results of the OCA. Power plant workers in the vicinity of the aqueous ammonia truck unloading area could be exposed to harmful concentrations of ammonia in the unlikely event of an accidental release, and may need to take protective action upon detection of ammonia odors. The proposed project design includes measures to reduce the likelihood and consequences of an accidental aqueous ammonia release. As discussed in Section 8.7 (Worker Safety), workers at the HPP facility will be trained to avoid and respond to accidental releases of hazardous materials, including aqueous ammonia. A checklist will be used whenever ammonia is delivered that reminds operators to shut the valves on the vapor return line

after delivery. The mechanical integrity program will ensure that the check valve on the vapor return line is regularly tested and inspected and replaced at prescribed intervals. Limited personal protective equipment will be available in a specified location in the event such equipment is required by emergency response personnel to approach the tank and stop the release. These systems will also be inspected and tested at prescribed intervals.

8.12.3.6 RMP Program Level

Both the U.S. EPA and California RMP requirements prescribe three program levels. The proposed aqueous ammonia system will require an RMP to satisfy California (CalARP) requirements. The quantity of aqueous ammonia on site is below the federal program level. CalARP regulations define program levels in accordance with California regulation (California Code of Regulations [CCR] 25531). Processes qualify for the lowest level (Level 1) if:

- There are no public receptors within a distance to an endpoint from a worst-case release.
- The facility has coordinated emergency response activities with local responders.
- The process has had no release of a regulated substance in the past five years that resulted in one or more offsite deaths, injuries, or response or restoration activities.

The HPP will coordinate emergency response activities with local responders, and as a newly proposed facility, there is no offsite accident history. The remaining Level 1 qualification is whether there are public receptors within a distance to an endpoint from a worst-case release. Under federal regulations, the toxic endpoint for ammonia is the ERPG-2 level of 200 ppm. The distance to 200 ppm under worst-case meteorology is 20.77 meters (68 feet) from the truck unloading area, which does not go off site. Thus, there are no public receptors within the offsite distance to ERPG-2, and the HPP is therefore eligible for Level 1 status under CalARP regulations, pursuant to CCR 25531.

8.12.4 Fire and Explosion Risk

As shown in Tables 8.12-1 and 8.12-2, several materials that will be used and/or stored on site during construction and operation of the proposed HPP are flammable. The following discussion focuses on the fire and explosion risk posed by lubricating oils and natural gas. These materials are considered to pose a greater risk than the other flammable substances, either because they are handled in large quantities (lubricating oils) or because they have a National Fire Protection Association (NFPA) fire rating of 4 (natural gas). The NFPA 4 rating is used only for substances that pose an extreme fire or explosion risk.

8.12.4.1 Lubricating Oils

Approximately 14,000 gallons of insulating oil will be used in the transformers at the HPP. A total of 7,400 gallons of lubricating oil will be used in rotating equipment and stored on site. The flashpoints of mineral oil and lubricating oil are 444 °F and 315–366 °F, respectively (Sax, 1992). NFPA assigns lubricating oils a fire hazard rating of 1, meaning that the materials "must be preheated before ignition can occur. Materials in this degree range require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur" (NFPA, 1991).

Because an external event, such as a fire, could preheat these materials to the point of ignition, fire suppression equipment will be available near the transformers and the lubricating oil storage area. As an additional mitigation measure, no mineral insulating oil will be stored on site.

8.12.4.2 Natural Gas

Natural gas has an NFPA rating of 4. The main component of natural gas, methane, is regulated under the RMP and the CalARP when used in processes in excess of 10,000 pounds. Natural gas will not be stored on site, but will be drawn from the pipeline that supplies gas to the facility. Therefore, the quantity of natural gas on site will be below the RMP and CalARP thresholds. Therefore, natural gas will not be regulated under RMP or CalARP

requirements. Approximately 24,000 million British thermal units (MMBtu) will be required at the HPP on a daily basis.

Approximately 2.2 miles of new 12-inch pipeline will be installed to connect the proposed HPP to the SoCalGas Company Line 800, 1.1 miles south of the intersection of 25th Avenue and Avenal Cutoff. An analysis of natural gas pipeline safety was conducted in 1993 and 1994 by the Sacramento Municipal Utility District and Woodward-Clyde, respectively (Woodward-Clyde, 1998). This safety analysis studied the incremental individual fatality risk per mile of 800 new miles of natural gas pipeline to be constructed in California. The results of this study indicated that the risk associated with the new pipeline was much lower than that for fires, earthquakes, electrocution, and lightning strikes in California. These conclusions can be applied to the pipeline proposed for the HPP.

8.12.5 Proposed Mitigation Measures

As discussed throughout this section, the proposed HPP will implement numerous accident prevention and mitigation measures to reduce the risk associated with the usage and storage of hazardous materials. Risk is a function of both the likelihood of a release and the consequences of a release. Although risk cannot be completely eliminated, the engineering and procedural features of the HPP will effectively reduce the possibility and potential consequences of a release.

The key prevention and mitigation features of the HPP include:

- Construction and operations personnel will be trained in safety and defensive emergency response procedures.
- Storage quantities of all hazardous materials will be minimized and nonhazardous materials will be substituted for hazardous materials at the Henrietta facilities to the extent practicable.
- Incompatible materials will be stored in separate, bermed or otherwise secondarily contained areas.
- Piping and tanks will be protected from potential traffic hazards by vehicle barriers.

- Personnel will be trained in the hazards of the materials they handle and in preventing accidents.

- Personnel will be trained in the use of fire suppression equipment, evacuation, notification, and other defensive emergency response procedures. (Information on fire suppression equipment is provided in Section 8.7.3.2 of this AFC application.)

The following prevention and mitigation measures will be implemented in the design and operation of the aqueous ammonia process:

- To prevent incidents associated with ammonia delivery, a trained HPP operator will be present at all times during delivery of aqueous ammonia and will follow a checklist of procedures.

- The mechanical integrity program will ensure that all valves in the ammonia process are regularly tested and inspected and replaced at prescribed intervals.

- Personal protective equipment will be available in a specified location in the event it is required by plant personnel to approach the tank and stop a release.

Additional accident prevention measures are mandated by various regulations. These measures are discussed below.

8.12.5.1 Transportation/Delivery of Hazardous Materials

Hazardous materials will be delivered to the HPP site periodically. Transportation of these materials will comply with all applicable regulations of the U.S. Department of Transportation, U.S. EPA, California Department of Toxic Substances Control, California Highway Patrol, and California State Fire Marshal. Transportation of aqueous ammonia will comply with the specific regulations in California Vehicle Code Section 32100.5 regarding materials that pose an inhalation hazard.

8.12.5.2 Hazardous Materials Business Plan

A Hazardous Materials Business Plan will be prepared prior to delivery of specified hazardous materials to the HPP, in conformance with Title 19 CCR and Health and Safety Code Section 25504. The plan requires facilities to develop the following information:

- Facility map showing locations of hazardous materials and emergency response equipment
- Hazardous materials inventory, including material safety data sheets (MSDSs)
- Emergency contact information
- Emergency response plans and procedures
- Emergency notification procedures
- Emergency response training for all employees

8.12.5.3 Risk Management Plan

An RMP will be prepared in conformance with requirements of the U.S. EPA and the local administering agency (Kings County Division of Environmental Health Services) for any regulated substance stored in any process in excess of its threshold quantity. An RMP will be prepared for aqueous ammonia prior to delivery to the HPP to meet Program Level 1 requirements. This RMP must include:

- Offsite Consequence Analysis (or Hazard Assessment)
- Emergency Response Program

8.12.5.4 Spill Prevention, Control, and Countermeasure Plan

The Spill Prevention, Control, and Countermeasure (SPCC) Plan will be prepared in accordance with federal and state regulations. This plan must be prepared if petroleum products are stored on site in aboveground storage tanks with a capacity that equals or exceeds 660 gallons for a single tank, or equals or exceeds 1,320 gallons for more than one tank. The SPCC Plan must be prepared prior to delivery of petroleum products to the site. The SPCC Plan will include information on spill response procedures and fuel storage.

8.12.5.5 Material Safety Data Sheets

MSDSs for the hazardous materials to be used on site will be kept on site as required by OSHA's Hazard Communication Standard, 29 CRF 1910.1200.

8.12.5.6 Monitoring

An extensive monitoring program will not be required, as the environmental and human health effects are expected to be minimal during both the construction and the operation and maintenance phases of the HPP. A variety of auditing and inspection requirements will ensure that the proposed measures effectively mitigate the risks associated with hazardous materials.

8.12.6 Indirect/Cumulative Impacts

8.12.6.1 Potential Indirect Effects of the Henrietta Peaker Project

The HPP is located in a rural area of Kings County, and the use of hazardous materials on the project site will not have indirect impacts on the local area.

8.12.6.2 Potential Cumulative Impacts

In accordance with the requirements of the California Environmental Quality Act (CEQA), this analysis must consider the potential cumulative impacts on existing public receptors and future residential development that could occur as a result of the proposed project and other planned and foreseeable future projects in the site vicinity. No other projects with related environmental impacts are anticipated in the local area. Therefore, no cumulative impacts associated with hazardous materials are expected from the HPP.

8.12.7 Laws, Ordinances, Regulations, and Standards

The following section describes the LORS that are applicable to the storage and handling of hazardous materials at the HPP. The HPP will comply with all applicable LORS regarding hazardous materials handling. A summary table of applicable LORS is provided at the end of this section (Table 8.12-10).

8.12.7.1 Federal

Hazardous substances are governed in part by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 and the Superfund Amendments

and Reauthorization Act (SARA) of 1986. Additional information on these laws and implementing regulations is provided below:

- SARA Title III, also known as the Emergency Planning and Community Right-to-Know Act (EPCRA), establishes reporting requirements for businesses and facilities that store, handle, or produce significant quantities of hazardous substances. EPCRA also requires states to establish a system to inform federal, state, and local authorities of any such substances stored or handled by the regulated community.

- Title 40 of the Code of Federal Regulations (CFR), Part 302 implements the CERCLA hazardous material release requirements and identifies hazardous substances, reportable quantities (RQs), and notification requirements. The National Response Center in Washington, D.C. must be notified in case of an accidental release of a hazardous substance in excess of its RQ. CERCLA-listed hazardous substances and RQs are listed in 40 CFR 302.4.

- 40 CFR Part 355 codifies the planning requirements of EPCRA and establishes the list of extremely hazardous substances, threshold planning quantities, and emergency response planning requirements.

- 29 CFR Part 1910 et seq. includes standards set by OSHA regarding the storing and handling hazardous materials. It also identifies equipment for protecting workers who handle hazardous materials and provides requirements for general facility safety. In general, California regulations pertaining to industrial relations (Title 8 CCR) are more stringent than those established by 29 CFR 1910.

Hazardous substances are also governed in part by the Clean Air Act.

- 40 CFR Part 68, Chemical Accident Prevention Provisions, identifies regulated substances, threshold quantities, and requirements for preventing accidental releases of these substances. An RMP is required for any processes involving regulated substances in excess of the respective threshold quantity. Aqueous ammonia is a listed toxic substance and has a threshold quantity of 20,000 pounds when stored at a concentration greater than 20 percent by weight. An RMP must be submitted when the regulated toxic substance is first introduced to the process.

Hazardous substances are also governed in part by the Clean Water Act.

- 40 CFR 112 identifies facilities required to prepare a Spill Prevention, Control, and Countermeasure (SPCC) Plan. Regulated facilities are those that store oil in aboveground tanks with a capacity greater than 660 gallons for

individual tanks or 1,320 gallons for more than one tank. Facilities with an underground storage capacity greater than 42,000 gallons must also comply with the SPCC requirements. The SPCC program is designed to prevent discharge of oil into navigable waters.

8.12.7.2 State/Regional

- California's version of the federal Community Right-to-Know law is set forth in Chapter 6.95 of the California Health and Safety Code, Article 1, the Hazardous Materials Release Response Plans and Inventory. This law requires emergency response plans for facilities storing hazardous materials in excess of 55 gallons, 500 pounds, or 200 cubic feet. Facilities that handle more than these quantities of hazardous materials must submit a Hazardous Materials Business Plan to the Certified Uniform Program Agency (CUPA).

- The CalARP Program requires facilities handling regulated substances in any process in quantities greater than the applicable threshold quantity to prepare an RMP, as described in Title 19 CCR Division 2, Chapter 4.5. Aqueous ammonia is regulated under CalARP when 500 pounds or more are stored on site.

- The State Water Resources Control Board administers the Aboveground Petroleum Storage Tank Program in accordance with Section 25270 of the California Health and Safety Code. Tanks must be registered with this agency. The Regional Water Quality Control Board ensures compliance with the program through inspections of tanks and review of the facility's SPCC Plan.

- Title 8 CCR addresses the control of hazardous substances. Section 5189 of Title 8 sets forth the PSM standard for processes involving a highly hazardous chemical in excess of certain quantities. Aqueous ammonia (greater than 44 percent by weight) is regulated under this program when a process use is equal to or greater than 15,000 pounds. PSM requires a process hazard analysis, current safety information, an employee participation program, written operating procedures, a mechanical integrity program, and other procedures.

- Section 5194, Hazard Communication, requires that employers evaluate the potential hazards of chemicals handled at their workplace and share this information with employees.

- California Vehicle Code Section 32100.5 requires specific regulations regarding materials that may pose an inhalation hazard.

8.12.7.3 Local

The Kings County Division of Environmental Health Services is the CUPA with responsibility for the following programs pertaining to hazardous materials:

- Business Plan
- CalARP/RMP
- Underground storage tanks
- Hazardous waste
- SPCC Plan

The 1988 Kings County Hazardous Waste Management Plan ensures that hazardous waste is managed safely and effectively. The major objectives of the Hazardous Waste Management Plan are to:

- Evaluate the current hazardous waste stream within the county
- Project hazardous waste quantities through the year 2001
- Provide for adequate waste management capacity for the treatment, storage, and disposal of these wastes

8.12.7.4 Industry Codes and Standards

Hazardous materials storage and delivery systems will be designed, constructed, operated, and maintained in accordance with applicable codes and regulations. Some of these codes and their applicability are listed below:

- California Building Code – incorporates the Uniform Building Code, Uniform Fire Code, Uniform Mechanical Code, and Uniform Plumbing Code
- Uniform Fire Code, Article 80 – Hazardous Materials section
- California Vehicle Code – includes licensing requirements for hazardous materials haulers

8.12.8 Involved Agencies and Contacts

Agency	Contact/Title	Telephone	Requirement
Regional Water Quality Control Board 3614 East Ashlan Fresno, CA 93726	Shelton Gray Senior Engineering Geologist	(209) 445-5508	SPCC Plan
Kings County Division of Environmental Health Services 330 Campus Drive Hanford, CA 93230	Tim Fillmore	(559) 584-1411 x2629	CalARP/ Hazardous Materials Business Plan

The extent of involvement, if any, by government agencies and/or private organizations in emergencies would depend on the type and magnitude of an incident. Table 8.12-8 identifies government agency and other organizational involvement by type of incident. Table 8.12-9 identifies organizational roles for incidents that involve hazardous materials.

In the event of an emergency, the HPP will rely on local emergency service providers. A Hazardous Materials Business Plan will be submitted to the Kings County Fire Department in Lemoore. The plan will illustrate the layout of the HPP and provide the HPP's Hazardous Materials Inventory Statement. The emergency service agencies will be given MSDSs for chemicals used in the facility, upon request. These sheets will be updated as new MSDSs are developed or revised or as more information on these chemicals is made available.

8.12.8.1 Required Permits

There are no permits required for storage and use of the planned hazardous materials.

8.12.8.2 Proposed Conditions of Certification

Proposed conditions of certification are contained in Appendix K. These conditions are proposed in order to ensure compliance with applicable LORS and/or to reduce potentially significant impacts to less-than-significant levels.

8.12.9 References

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TABLES

Table 8.12-1
Hazardous Materials Used During the Construction Phase

Material	Maximum Onsite Quantity	Use	Hazards[1]	Storage Type/Area
Fuels				
Unleaded gasoline	2,000 gallons	Fuel for construction equipment	Acute, chronic, fire	Equipment service vehicle tanks
Diesel fuel	2,000 gallons	Fuel for construction equipment	Acute, chronic, fire	Equipment service vehicle tanks
Lubricants				
Turbine oil, maintenance	55–110 gallons	Lubricating oil for CTGs	Acute, chronic, fire	Equipment service vehicle tanks
Turbine oil, filling operation	5,000 gallons, short term, 1 day	Lubricating oil for CTGs	Acute, chronic, fire	Equipment service vehicle tanks
Motor oils	20–30 gallons	Lubricating oil for construction equipment and vehicles	Acute, chronic, fire	Equipment service vehicle tanks
Hydraulic oils	40–50 gallons	Hydraulic construction equipment	Acute, chronic, fire	Equipment service vehicle tanks
Various greases	< 25 gallons	Lubricants for construction equipment and permanent plant equipment including motors, pumps, valves, etc.	Acute, chronic, fire	Original shipping containers, equipment service vehicle
Solvents				
WD-40, similar solvents	2–3 gallons	Grease remover	Acute, chronic, fire	Original shipping containers, construction warehouse, flammables storage cabinet
Methyl ethyl ketone	< 25 gallons	Solvent and cleaner	Acute, chronic, fire, reactive	Original shipping containers, construction warehouse, flammables storage cabinet
PVC pipe cleaner	10–20 gallons	Solvent to clean PVC pipe joints prior to completing pipe joint welding	Acute, chronic, fire	Original shipping containers, construction warehouse, flammables storage cabinet
Paint, miscellaneous	10–20 gallons	Paint for touch-up painting of construction equipment and buildings	Acute, chronic	Original shipping containers, construction warehouse

Table 8.12-1 (continued)
Hazardous Materials Used During the Construction Phase

Material	Maximum Onsite Quantity	Use	Hazards[1]	Storage Type/Area
Paint	400–500 gallons	Permanent structures paint	Acute, chronic	Original shipping containers, construction warehouse
Paint thinner, miscellaneous	5–10 gallons	Thinner for touch-up paint	Acute, chronic, fire, reactive	Original shipping containers, construction warehouse
Paint thinner	200–300 gallons	Thinner for structures paint	Acute, chronic, fire, reactive	Original shipping containers, construction warehouse
Aerosol paint	40–50 12 ounce cans	Touch-up paint or marking paint	Acute, chronic, fire, pressure	Original shipping containers, construction warehouse
Miscellaneous				
Concrete curing agents	25–30 gallons	Curing agent applied to surface of freshly poured concrete to aid in proper curing	Acute, chronic, fire	Original shipping containers, construction warehouse
Concrete form release agents	25–30 gallons	Agent sprayed on concrete forms prior to placement of concrete so forms can be stripped after concrete sets	Acute chronic fire	Original shipping containers, construction warehouse
Epoxy Resins				
Epoxy type grout material	5–10 gallons	Epoxy based grout material for grouting of equipment	Fire	Original shipping containers construction warehouse
PVC pipe joint cement	5–10 gallons	Solvent based joint cement for assembly of PVC piping	Fire	Original shipping containers, construction warehouse
Concrete anchor epoxy	100–200 epoxy-filled 4–6 ounce glass vials	Combination epoxy and hardener agents in glass vials used for bonding anchor bolts	Fire	Original shipping containers, construction warehouse

[1] Hazard categories are defined by 40 CFR 370.2. Health hazards include acute (immediate) and chronic (delayed). Physical categories include fire, sudden release of pressure, and reactive.

CFR = Code of Federal Regulations
CTG = combustion turbine generator
PVC = polyvinyl chloride

Table 8.12-2
Hazardous Materials Used During the Operation and Maintenance Phase

Chemical Name	Quantity	State	Location	Delivery Freq.	Use
CTG Lube & Hydraulic Oil	7,400 gal	L	6	1x/10 years	Lubrication
CTG Water-wash Soap	100 gal	L	8	1x/year	CTG Cleaning
CTG Step-up Xfrmr Oil	9,000 gal	L	12	1x/10 years	Xfrmr Insulation
Liquid Carbon Dioxide	3,200 lb	L	16	1x/year	Fire Suppression
Nitrogen	20,000 cf	G	23	2x/year	CEMS
Nitric Oxide (5 ppm)	800 cf	G	23	4x/year	CEMS
Carbon Monoxide (15 ppm)	550 cf	G	23	4x/year	CEMS
Diesel Fuel in EG	250 gal	L	37	1x/year	Emergency Power
Aqueous Ammonia	9,000 gal	L	17	1x/4 days	NO_x Control
115 kV/4, 160V Xfrmr Oil	2,000 gal	L	62	1x/10 years	Xfrmr Insulation
4160V/480V Xfrmr Oil	3,000 gal	L	62	1x/10 years	Xfrmr Insulation

*Water treatment chemicals (mainly by Nalco) will be delivered as needed. One Nalco delivery is expected each month; however, not all water treatment chemicals will be delivered each month.

Note: The location numbers correspond to the plant arrangement drawing (see Figure 8.12-1).

cf = cubic feet
CEMS = continuous emissions monitoring system
CTG = combustion turbine generator
EG = emergency generator
G = gas
gal = gallons
L = liquid
lb = pounds
STG = steam turbine generator
V = volt
Xfrmr = transformer

Table 8.12-3
Characteristics of the Hazardous Materials Used
During the Operation and Maintenance Phase

Material	CAS Number	Maximum Onsite Quantity	Hazards	Phase	CalARP Threshold Quantity
CTG Lube & Hydraulic Oil	None	7,400 gal	Fire, acute	Liquid	N/A
CTG Water-wash Soap	None	Unknown	Acute	Liquid	N/A
CTG Step-up Transformer Oil	None	9,000 gal	Fire, acute	Liquid	N/A
Liquid Carbon Dioxide	124-38-9	3,200 lb	Pressure, acute	Liquid	N/A
Nitrogen	7727-37-9	20,000 cf	Pressure, acute	Gas	N/A
Nitric Oxide (5 ppm)	10102-43-9	800 cf	Pressure, acute	Gas	100 lb
Carbon Monoxide (15 ppm)	630-08-0	550 cf	Pressure, acute	Gas	N/A
Diesel Fuel in EG	6847-3-6	250 gal	Fire, acute	Liquid	N/A
Aqueous Ammonia	7664-41-7	<20,000 lb. *	Acute, reactive	Liquid	500 lb
115kV/4160V Transformer Oil	None	2,000 gal	Fire, acute	Liquid	N/A
4160V/480V Transformer Oil	None	3,000 gal	Fire, acute	Liquid	N/A

CalARP = California Accidental Release Prevention
CAS = Chemical Abstract Service
cf = cubic feet
CTG = combustion turbine generator
EG = emergency generator
gal = gallons
lb = pounds
N/A = not applicable
ppm = parts per million
STG = steam turbine generator
* On an anhydrous basis

Table 8.12-4
Occupational Exposure Limits for Airborne Ammonia Vapor

Agency	Name	Value (ppm)
NIOSH	Recommended Exposure Limit (REL)[1]	25
NIOSH	Recommended Exposure Limit, Ceiling (REL CL)[2]	50
NIOSH	Short-Term Exposure Limit (STEL)[3]	35
OSHA	Permissible Exposure Limit (PEL)[4]	50
OSHA	Short-Term Exposure Limit (STEL)[5]	35
ACGIH	Short-Term Exposure Limit (STEL)[6]	35
ACGIH	Permissible Exposure Limit (PEL)[7]	25
ACGIH	Threshold Limit Value (TLV)[8]	25

[1] Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek.
[2] Concentration that should not be exceeded at any time.
[3] Time-weighted average concentration for 15 minutes that should not be exceeded at any time during a workday.
[4] Time-weighted average concentration that must not be exceeded during any eight-hour work shift of a 40-hour workweek.
[5] Time-weighted average concentration for 15 minutes that must not be exceeded at any time during a workday.
[6] Recommended time-weighted average concentration for 15 minutes that should not be exceeded at any time during a workday.
[7] Recommended time weighted average concentration that must not be exceeded during any eight-hour work shift of a 40-hour workweek.
[8] Airborne concentration under which it is believed that nearly all workers may be repeatedly exposed without adverse health effects.

ACGIH = American Conference of Governmental Industrial Hygienists
NIOSH = National Institute for Occupational Safety and Health
OSHA = Occupational Safety and Health Administration
ppm = parts per million

Table 8.12-5
Other Exposure Limits for Ammonia Vapor

Agency/Source	Name	Value (ppm)
AIHA	Emergency Response Guideline (ERPG) Level 1[1]	25
NRC[2]	STPEL	75
AIHA	ERPG-2[3]	200
NIOSH	Immediately Dangerous to Life and Health (IDLH)[4]	300
AIHA	ERPG-3[5]	1,000
Wray, 1991	Lethality Level[6]	2,000

[1] The ERPG-1 corresponds to the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing other than mild, transient adverse health effects or perceiving a clearly defined objectionable odor.
[2] The Short-Term Public Emergency Limit (STPEL) was developed by the National Research Council (NRC). The STPEL is considered the significance level by CEQA and the CEC (Tyler, 1998).
[3] The ERPG-2 corresponds to the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing or developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action.
[4] Maximum concentration exposure of up to 30-minute duration from which a worker could escape without loss of life or irreversible health effects.
[5] The ERPG-3 corresponds to the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing or developing life-threatening health effects.
[6] The human lethality value of ammonia over a 30-minute averaging time.

AIHA = American Industrial Hygiene Association
NIOSH = National Institute for Occupational Safety and Health
ppm = parts per million

Table 8.12-6
Accidental Release Scenario Release Rates and Meteorological Conditions

Ambient Temperature (°F)	Wind Speed (m/s)	Stability Class[1]	Assumed Liquid Temperature (°F)[2]	Release Rate (kg/s)
63	1.0	F	83	0.0001215
63	2.5	D	83	0.0002415
95	1.0	F	115	0.0001995
95	2.5	D	115	0.0003966
115	1.0	F	135	0.0002464
115	2.5	D	135	0.0004898

[1] Stability classes: F (Stable conditions); D (Neutral conditions).
[2] Released aqueous ammonia assumed to be 20 °F higher for conservative calculation of evaporation rate.

kg/s = kilograms per second
m/s = meters per second

Table 8.12-7
Dispersion Modeling Results

Ambient Temperature (°F)	Wind Speed (m/s)	Stability Class[1]	Distance to Various Levels of Concern (m)[2] 2,000 ppm	300 ppm	200 ppm	75 ppm
63	1.0	F	3.32	10.45	13.45	23.11
63	2.5	D	------[3]	4.72	6.03	9.85
95	1.0	F	4.79	14.43	18.23	31.58
95	2.5	D	1.81	6.73	8.43	13.62
115	1.0	F	5.76	16.63	20.77	36.30
115	2.5	D	2.41	7.80	9.30	15.20

[1] Stability classes are defined as follows: D = neutral conditions; F = stable conditions.
[2] Refer to Figures 8.12-3, 8.12-4, and 8.12-5 for graphical representations of ammonia concentrations under the modeling scenarios.
[3] The SCREEN3 model did not calculate ammonia concentrations this high.

Table 8.12-8
Involvement of Government Agencies and Other Organizations by Type of Incident

Organization	Emergency Phone #	Fire	Spill	Security	Medical	Technical Assistance	Other
South Lemoore Fire Department	911	X	X	X	X	X	X
Emergency Medical Services	911	X	X		X		
Police Department	911			X			
California Highway Patrol	911		X[a]				
Hanford Community Medical Center	(559) 582-9000				X	X	
San Joaquin Valley Unified Air Pollution Control District	(559) 497-1000		X			X	
Central Valley Regional Water Quality Control Board	(559) 445-5116		X			X	X
Kings County Department of Public Health, Division of EHS	(559) 584-1411 (559) 582-3211 (after hours)		X		X	X	
California EPA; Department of Toxic Substances Control	(510) 540-2122		X		X	X	
California Office of Emergency Services	(800) 852-7550	X	X		X	X	X
California Department of Fish & Game	(707) 944-5512		X[b]				
U.S. EPA National Response Center	(800) 424-8802		X[b]			X	
U.S. Department of Transportation	(415) 280-4897		X[a]			X	
U.S. Coast Guard	(415) 556-2103		X[b]			X	
M. P. Vacuum Services	(800) 458-3036 (805) 393-1151		X[b]			X	
Poison Control Center	(800) 876-4766		X		X	X	
Pacific Gas & Electric Company	(800) 743-5000						X
Southern California Gas Company							X

[a] If spill is on highway.
[b] If spill is into waterways or sewer.
EHS = Environmental Health and Safety
EPA = Environmental Protection Agency

Table 8.12-9
Organizational Roles for Incidents That Involve Hazardous Materials

Agency	Role
Fire Department	Lead agency for all life-safety issues (e.g., fire, explosion, injury or illness, chemical release); assistance in initial care of victims.
Emergency Medical Services	Lead agency for medical operations and primary care and transport of victims.
Police Department	Lead agency for security-related emergencies (e.g., bomb threat, sabotage, civil disturbance, etc.); maintains order in emergencies involving community evacuations; expedites the movement of vehicles; California Highway Patrol must be notified of violations of hazardous materials transportation regulations or hazardous materials releases onto highways.
Water District; Sanitation District	Required to be notified in the event of a discharge of hazardous materials to the sanitary sewer system or storm drain.
Hanford Community Medical Center	Receives and treats injury and illness victims, can provide technical assistance for first aid and basic life support or other issues.
Kings County Department of Public Health, Division of Environmental Health Services	Regulates hazardous waste regulations for hazardous waste generators; must be notified of hazardous waste incidents; must be notified of any sanitary concerns (e.g., food poisoning, epidemics, etc.).
San Joaquin Valley Unified Air Pollution Control District	Must be notified of any unauthorized discharges of or hazardous materials to the atmosphere.
RWQCB - Central Valley	Must be notified of any unauthorized discharges of hazardous materials into the soil, groundwater, or surface water.
California EPA; Department of Toxic Substances Control	Must be notified of any unauthorized discharges of hazardous materials to the environment; can provide technical assistance for toxicology issues (HESIS).
California Office of Emergency Services	Must be notified of any life threatening releases of hazardous materials into the environment; acts as the lead agency in coordinating responses to large-scale emergencies and regional disasters.
California Department of Fish and Game	Must be notified of any discharges of hazardous materials into surface waters.
U.S. EPA	Overall regulation of environmental laws; must be notified about discharges of hazardous materials in excess of reportable quantities; must be notified of discharges of oil.

Table 8.12-9 (continued)
Organizational Roles for Incidents That Involve Hazardous Materials

Agency	Role
U.S. Department of Transportation	Regulates the transportation of hazardous materials on public roads.
U.S. Coast Guard	Must be notified of hazardous materials releases into navigable waters.
M.P. Vacuum Services or CET Environmental	Provides assistance in removal and transportation of hazardous material spills.
Phillips Services	Provides assistance in removal and transportation of hazardous materials spills when CET Environmental is not available.
Poison Control Center	Provides information regarding the ingestion or inhalation of poisonous chemicals.
Pacific Gas and Electric Company	Must be notified in the event of a power failure. Provides assistance if electrical services are temporarily unavailable.
Southern California Gas Company	Must be notified in the event of a gas leak. Provides assistance if gas services are temporarily unavailable.

Table 8.12-10
Summary of Laws, Ordinances, Regulations, and Standards Applicable to Hazardous Materials Handling

Jurisdiction	Authority	Administering Agency	Requirements & Compliance	AFC Conformance Section
Federal	CERCLA, as amended by SARA; Title III, Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986, 42 USC 11001 et seq.; 40 CFR Parts 302, 355, 370, and 372.	U.S. EPA Region IX; National Response Center; California Office of Emergency Services (OES); Kings County Division of Environmental Health Services	Project will comply with CERCLA, release notification requirements; SARA Title III, reporting requirements for storing, handling, or producing regulated substances.	8.12.3 and 8.12.6
Federal	29 CFR 1910 et seq. 29 CFR 1926 et seq.	Occupational Safety and Health Administration (OSHA)	Project will comply with requirements pertaining to employers whose employees handle hazardous materials and extremely hazardous chemicals.	8.12.6
Federal	Clean Air Act Amendments of 1990, Section 112(r), Accidental Release Prevention Program, 42 USC 7412 (r), 40 CFR Part 68	U.S. EPA Region IX; California OES; Kings County Division of Environmental Health Services	Project will comply with requirements pertaining to risk management of regulated substances.	8.12.3.3, 8.12.4, and 8.12.6
Federal	Clean Water Act, Spill Prevention, Control, and Countermeasure Plan, 40 CFR 112		Project will comply with requirements designed to prevent the discharge of oil into navigable waters.	8.12.6.4
State	California Health & Safety Code §§ 25500–25520; 19 CCR §§ 2720–2734	Kings County Division of Environmental Health Services	Project will prepare a Hazardous Materials Business Plan (HMBP).	8.12.6
State	California Accidental Release Prevention (CalARP) Program, California Health & Safety Code § 25531 et seq., 19 CCR Division 2, Chapter 4.5	California OES, Kings County Division of Environmental Health Services	HMBP requirements.	8.12.6

Table 8.12-10 (continued)
Summary of Laws, Ordinances, Regulations, and Standards Applicable to Hazardous Materials Handling

Jurisdiction	Authority	Administering Agency	Requirements & Compliance	AFC Conformance Section
State	8 CCR § 339, § 3200 et seq., 5139 et seq., 5160 et seq., 5189 et seq.	Cal-OSHA	Project will meet requirements pertaining to the control and management of hazardous substances.	8.12.3 and 8.12.6
State	Uniform Fire Code, Article 80 and others	Kings County Fire Department	Project will meet provisions regarding fire protection and neutralization systems for hazardous materials.	8.12.8 and 8.12.9
Industry	State Building Code	Various agencies	Project will meet requirements pertaining to fire prevention, building safety, etc.	8.12.8 and 8.12.9
Industry	California Vehicle Code 31300 et seq.	Caltrans	Project will comply with requirements for transportation of hazardous materials on state highways.	8.12.3.1, 8.12.3.2, and 8.12.6.1

CCR = California Code of Regulations
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR = Code of Federal Regulations
EPA = Environmental Protection Agency
SARA = Superfund Amendments and Reauthorization Act of 1986
AFC = Application for Certification
USC = U.S. Code

FIGURES